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10/530,992	09/16/2005	Bert Groenendaal	234920	2167

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EXAMINER

ZIMMERMAN, JOSHUA D

ART UNIT	PAPER NUMBER
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2854

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09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,992

Applicant(s)

GROENENDAAL ET AL.

Examiner

Joshua D. Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16 and 18-52 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 11-14, 16, 20, 26, 29, 35, 39, 44 and 47 is/are rejected.
- 7) ☒ Claim(s) 37-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 3,4,6-10,18-19,21-25,27,28,30-34,36,39-43,45,46 and 48-52.

DETAILED ACTION

Claim Objections

1. Claims 37 and 38 are objected to because they are dependent upon a withdrawn claim. For purposes of examination, it is assumed that the claim status submitted by applicants is a typographical error and that claims 37 and 38 were meant to be withdrawn. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

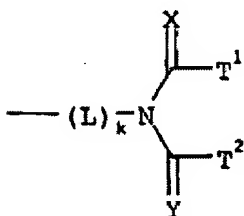
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 11, 12, 13, 14, 16, 26, 35 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunita (US 6391519). Regarding claim 1, Kunita discloses "a polymer comprising a phenolic monomeric unit (polymer II-(1)) wherein the H atom of the hydroxy group of the phenolic monomeric unit is replaced by a group Q (the group -X-Y'-Z'; see column 5 lines 49-52, column 31, lines 46-50 and 57-65; column 32 lines 1-24 and especially line 22 reciting the selection of an imide, which inherently includes N-imides) wherein L is a linking group (component X), wherein k is 0 or 1, wherein L is covalently bound to the O atom of the polymer when k is 1, or wherein the N atom of the N-imide group is covalently bound to the O atom of the polymer when

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k is 0 (see the structure of II-(1)), wherein X or Y are independently selected from O or S (when choosing an imide, X and Y are selected to be O), and wherein T¹ and T² represent a terminal group (when choosing an imide, T¹ and T² are inherently present, no matter which imide one chooses or which Z' (column 32, lines 55-67) one chooses)."

Kunita fails to disclose that the group Q is an N-imide and has the structure



However, it is noted that in the specific embodiment of Kunita cited here that a monovalent linking group Y' is not preferred (column 31, lines 58-60). However, the groups Y' are selected because they are "known to cause a strong interaction with a phenolic hydroxyl group (column 31, lines 60-64)." Further, in the first embodiment disclosed by Kunita, the groups from which Y are chosen include monovalent linking groups, such as monovalent imides and, generically, any monovalent nitrogen compound (see the list of structures drawn on column 6 for Y¹). Kunita chooses these compounds specifically because of the strong interaction with the phenolic hydroxyl group (column 30, lines 13-18), which is the same reasoning for choosing those structures listed for Y¹. Using these compounds/structures results in a film with a high density and an improved image recording material (column 30, lines 18-27). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use an N-imide (a sub-genus of both the parent genera 'imide' and

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'monovalent nitrogen compounds', which one having ordinary skill in the art could at once envisage) as the group Y' in the second embodiment (II-(1)) of Kunita in order to achieve a film with a high density.

An alternative motivation to combine the embodiments of Kunita will be outlined here. The specific functional group for the second embodiment of Kunita (X-Y'-Z') is chosen because it exhibits a strong interaction to create a hydrogen bond with an adjacent phenolic hydroxyl group in the polymer (column 39, lines 12-15) in order to create a film with a high density (column 39, lines 19-20). It is an inherent property of monovalent nitrogen that it will create hydrogen bonds with nearby hydroxyl groups. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use an N-imide (a sub-genus of both the parent genera 'imide' and 'monovalent nitrogen compounds', which one having ordinary skill in the art could at once envisage) as the group Y' in the second embodiment (II-(1)) of Kunita in order to achieve a film with a high density.

Regarding claim 2, Kunita further discloses "wherein the terminal groups T¹ and T² are independently selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group (choosing an imide as the component Y' and any selection allowed by Kunita for Z' will result in the terminal groups meeting this limitation inherently. Specifically, with an N-imide as Y', and a methyl group as Z'), or wherein T¹ and T² together with the N-imide group represent the necessary atoms to form a cyclic structure, or wherein T¹ and T²

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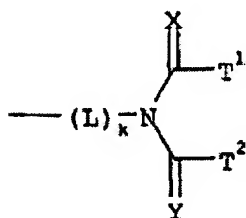
represent the following structures $-L^1-R^1$ and $-L^2-R^2$, wherein L^1 and L^2 represent independently a linking group, wherein R^1 and R^2 are independently selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, halogen, $-\text{CN}$, or $-\text{NO}_2$, or therein two groups selected from each L^1 , L^2 , R^1 and R^2 together represent the necessary atoms to form a cyclic structure."

Regarding claim 11, Kunita further discloses "wherein said polymer comprising a phenolic monomeric unit is a novolac, resol or polyvinylphenol (column 5, lines 1-12, column 30 lines 50-52 and column 68 lines 40-45)."

Regarding claim 12, Kunita discloses "a heat-sensitive lithographic printing plate precursor (column 3, lines 41-45) comprising a support having a hydrophilic surface and an oleophilic coating provided on the hydrophilic surface (column 4 lines 41-45 and column 56, lines 17-18), said coating comprising an infrared light absorbing agent (column 4, lines 37-41) and a polymer comprising a phenolic monomeric unit (polymer II-(1)) wherein the H atom of the hydroxy group of the phenolic monomeric unit is replaced by a group Q (the group $-\text{X}-\text{Y}'-\text{Z}'$; see column 5 lines 49-52, column 31, lines 46-50 and 57-65; column 32 lines 1-24 and especially line 22 reciting the selection of an imide, which inherently includes N-imides) wherein L is a linking group (component X), wherein k is 0 or 1, wherein L is covalently bound to the O atom of the polymer when k is 1, or wherein the N atom of the N-imide group is covalently bound to the O atom of the polymer when k is 0 (see the structure of II-(1)), wherein X or Y are independently selected from O or S (when choosing an imide, X and Y are selected to be O), and

wherein T¹ and T² represent a terminal group (when choosing an imide, T¹ and T² are inherently present, no matter which imide one chooses or which Z' (column 32, lines 55-67) one chooses)."

Kunita fails to disclose that the group Q is an N-imide and has the structure



However, it is noted that in the specific embodiment of Kunita cited here that a monovalent linking group Y' is not preferred (column 31, lines 58-60). However, the groups Y' are selected because they are "known to cause a strong interaction with a phenolic hydroxyl group (column 31, lines 60-64)." Further, in the first embodiment disclosed by Kunita, the groups from which Y are chosen include monovalent linking groups, such as monovalent imides and, generically, any monovalent nitrogen compound (see the list of structures drawn on column 6 for Y¹). Kunita chooses these compounds specifically because of the strong interaction with the phenolic hydroxyl group (column 30, lines 13-18), which is the same reasoning for choosing those structures listed for Y¹. Using these compounds/structures results in a film with a high density and an improved image recording material (column 30, lines 18-27). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use an N-imide (a sub-genus of both the parent genera 'imide' and 'monovalent nitrogen compounds', which one having ordinary skill in the art could at

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once envisage) as the group Y' in the second embodiment (II-(1)) of Kunita in order to achieve a film with a high density.

An alternative motivation to combine the embodiments of Kunita will be outlined here. The specific functional group for the second embodiment of Kunita (X-Y'-Z') is chosen because it exhibits a strong interaction to create a hydrogen bond with an adjacent phenolic hydroxyl group in the polymer (column 39, lines 12-15) in order to create a film with a high density (column 39, lines 19-20). It is an inherent property of monovalent nitrogen that it will create hydrogen bonds with nearby hydroxyl groups. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use an N-imide (a sub-genus of both the parent genera 'imide' and 'monovalent nitrogen compounds', which one having ordinary skill in the art could at once envisage) as the group Y' in the second embodiment (II-(1)) of Kunita in order to achieve a film with a high density.

Regarding claim 13, Kunita further discloses "wherein said coating further comprises a dissolution inhibitor and wherein said precursor is a positive working lithographic printing plate precursor (column 4, lines 52-56 and column 47, lines 47-67)."

Regarding claim 14, Kunita further disclose "wherein said dissolution inhibitor is selected from the group consisting of

an organic compound which comprises at least one aromatic group and a hydrogen bonding site (column 47, lines 59-61),

a polymer or surfactant comprising siloxane or perfluoroalkyl units, and mixtures thereof.”

Regarding claim 16, Kunita further discloses “wherein said coating further comprises a latent Bronsted acid and an acid-crosslinkable compound and wherein said precursor is a negative working lithographic printing plate precursor (column 4, lines 46-51).”

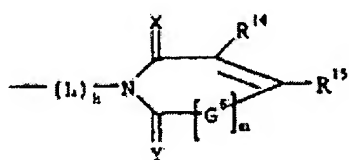
Regarding claim 26, Kunita further discloses “wherein the terminal groups T^1 and T^2 are independently selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group (choosing an imide as the component Y' and any selection allowed by Kunita for Z' will result in the terminal groups meeting this limitation inherently. Specifically, with an N-imide as Y' , and a methyl group as Z'), or wherein T^1 and T^2 together with the N-imide group represent the necessary atoms to form a cyclic structure, or wherein T^1 and T^2 represent the following structures $-L^1-R^1$ and $-L^2-R^2$, wherein L^1 and L^2 represent independently a linking group, wherein R^1 and R^2 are independently selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, halogen, $--CN$, or $--NO_2$, or therein two groups selected from each L^1 , L^2 , R^1 and R^2 together represent the necessary atoms to form a cyclic structure.”

Regarding claim 35, Kunita further discloses “wherein said coating further comprises a dissolution inhibitor and wherein said precursor is a positive working lithographic printing plate precursor (column 4, lines 52-56 and column 47, lines 47-67).”

Regarding claim 44, Kunita further discloses "wherein said coating further comprises a latent Bronsted acid and an acid-crosslinkable compound and wherein said precursor is a negative working lithographic printing plate precursor (column 4, lines 46-51)."

3. Claims 5, 20, 29 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunita as applied to claims 1, 2 and 12 above, further in view of Deroover et al. (US 2004/0048195).

Regarding claims 5, 20 and 29 Kunita discloses all that is claimed, but fail to disclose that "the N-imide group Q has the following formula



wherein G^{sup.6} is a group selected from O, S, NR¹¹ or CR¹²R¹³, wherein m is 0 or 1, wherein R¹² to R¹⁵ are independently selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group or -L⁵-R¹⁶, wherein L⁵ is a linking group, wherein R¹¹ and R¹⁶ are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, or wherein two groups selected from each R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ and L⁵ together represent the necessary atoms to form a cyclic structure."

However, as discussed above in the rejection of claims 1, 2 and 12, respectively, an N-imide group is chosen, but a specific imide is not. Deroover et al. teach using phthalimides in polymers for lithographic printing plate precursors in order to improve

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the run length and chemical resistance of the plate (paragraph 53). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use a phthalimide as the imide group in the modified embodiment of Kunita in order to improve the run length and chemical resistance of the plate. It is noted that when using a phthalimide, the above limitations are met as outlined here: $m=0$, X and Y are O, and R^{14} and R^{15} form an aromatic 6-membered ring.

Regarding claim 47, Kunita further discloses "wherein said coating further comprises a latent Bronsted acid and an acid-crosslinkable compound and wherein said precursor is a negative working lithographic printing plate precursor (column 4, lines 46-51)."

Response to Arguments

4. Applicants' arguments filed 6/22/07 have been fully considered but they are not persuasive.

5. In response to applicants' arguments against the embodiments of Kunita individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. MPEP 2143.01 (II)

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The failings of the embodiment (II-1) of Kunita pertaining to the use of N-imides have been acknowledged and addressed in the rejection above. However, Kunita also teaches that the reason for using the specific Y¹ groups is because they cause a strong interaction with the phenolic hydroxyl group (column 31, lines 60-65), further teaching that the monovalent nitrogen compounds used in the embodiment (I-1) are used because they have a strong interaction with the phenolic hydroxyl group (column 30, lines 13-18) which results in a film with a high density and an improved image recording material (column 30, lines 18-27). Clearly one having ordinary skill in the art would recognize that using monovalent nitrogen compounds as the Y¹ group would have the same effect and would reasonably expect to achieve the same film with high density and the same improved image recording material. See MPEP 2143.02.

Further, applicants (in the first paragraph of page 24 of applicants' reply) misquote the Office Action as stating "when one selects an imide, N-imides are inherently included," inferring that when one selects an imide, one *must* select an N-imide. However, what was actually stated (and is reiterated above) was: "column 32 lines 1-24 and especially line 22 reciting the selection of an imide, which inherently includes N-imides." The only thing that can be inferred by this quote is that 'N-imides' are an anticipated species of the genus 'imides,' nothing more.

6. Regarding applicants' assertion that Deroover et al. is not prior art, applicants are directed to MPEP 706.02(f) and 706.02 V. The effective filing date of Deroover is the filing date of the provisional application with a filing date of 09/24/2002 and the cited

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passage of Deroover et al. is supported by the provisional application on page 19, lines 20-36 of the specification, therefore making it available under 35 USC 102(e).

7. Finally, it is noted that applicants did not address the alternative motivation on page 5 of the previous office action. Therefore, this motivation is still deemed valid.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER